# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/621,259 | 07/15/2003 | Miska Hannuksela | 944-001.082-1 | 9729 |

| 4955 | 7590 | 04/25/2006 |
|---|---|---|

WARE FRESSOLA VAN DER SLUYS &
ADOLPHSON, LLP
BRADFORD GREEN BUILDING 5
755 MAIN STREET, P O BOX 224
MONROE, CT 06468

| EXAMINER |
|---|
| RAO, ANAND SHASHIKANT |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2621 | |

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | | Application No. | Applicant(s) |
|---|---|---|---|
| **Office Action Summary** | | 10/621,259 | HANNUKSELA ET AL. |
| | | Examiner | Art Unit |
| | | Andy S. Rao | 2621 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on \_\_\_\_\_.

2a)☐ This action is **FINAL**.      2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22* is/are pending in the application.

　　4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)☐ Claim(s) \_\_\_\_\_ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) \_\_\_\_\_ is/are objected to.

8)☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on \_\_\_\_\_ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All  b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date *7/21/04*.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. \_\_\_\_\_ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1.      The specification has not been checked to the extent necessary to determine the presence

of all possible minor errors.  Applicant's cooperation is requested in correcting any errors of

which applicant may become aware in the specification.

### *Claim Rejections - 35 USC § 102*

2.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.      Claims 1-10, 14, 17, 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by

Wells et al., (US Patent: 6,310,915: hereinafter referred to as "Wells").

Wells discloses a method (Wells: column 16, lines 35-67; column 17, lines 1-10) of

concealing an error in a frame (Wells: column 12, lines 45-67) of a video sequence, the video

sequence comprising at least a first scene and a second scene (Wells: column 13, lines 40-56),

the second scene having a scene transition from the first scene, wherein the scene transition

comprises a number of frames and the scene transition is one of a number of types (Wells:

column 10, lines 65-67), said method comprising: identifying the type of scene transition (Wells:

column 10, lines 10-20) and applying an error concealment procedure to conceal an error in a

frame belonging to the transition based on the identified type of scene transition (Wells: column

12, lines 45-67), as in claim 1.

Regarding claim 2, Wells discloses wherein the identified type of scene transition is a scene cut (Wells: column 6, lines 20-25), as in the claim.

Regarding claim 3, Wells discloses wherein if a whole picture belonging to the scene cut is lost, the lost picture is not concealed (Wells: column 13, lines 1-20), as in the claim.

Regarding claim 4, Wells discloses wherein if part of a picture belonging to the scene cut is lost or corrupted, a spatial error concealment algorithm is applied to conceal the lost or corrupted part of the picture (Wells: column 11, lines 50-55), as in the claim.

Regarding claim 5, Wells discloses wherein the identified type of scene transition is a gradual scene transition (Wells: column 10, lines 65-67), as in the claim.

Regarding claims 6-8, Wells discloses wherein the scene transition is a fade, dissolve, or wipe (Wells: column 10, lines 10-20), as in the claims.

Regarding claim 9, Wells discloses wherein if a whole picture belonging to the gradual transition is lost or corrupted (Wells: column 13, lines 40-52), a spatio-temporal (Wells: column 11, lines 50-55 and 63-67; column 12, lines 1-9) error concealment algorithm (Wells: column 12, lines 45-67; column 13, lines 1-30) is applied to conceal the lost or corrupted part of the picture (Wells: column 13, lines 40-55), as in the claim.

Regarding claim 10, Wells discloses wherein if part of a picture belonging to the gradual transition is lost or corrupted (Wells: column 15, lines 5-40), a spatio-temporal (Wells: column 11, lines 50-55 and 63-67; column 12, lines 1-9) error concealment algorithm (Wells: column 12, lines 45-67; column 13, lines 1-30) is applied to conceal the lost or corrupted part of the picture (Wells: column 13, lines 40-55), as in the claim.

Wells discloses video coding device (Wells: figure 1) for encoding a video sequence into a data stream, the video sequence comprising at least a first scene and a second scene (Wells: column 13, lines 40-56) and having a scene transition from the first scene, wherein the scene transition comprises a number of frames and the scene transition is one of a number of types (Wells: column 10, lines 65-67), said video coding device comprising: means for identifying frames associated with the transition (Wells: column 10, lines 10-20); and means for providing information about the type of transition (Wells: column 12, lines 45-67), as in claim 14.

Wells discloses a video decoding device (Wells: column 7, lines 35-45) for decoding a video sequence from a data stream, the video sequence comprising at least a first scene and a second scene (Wells: column 10, lines 40-56) and having a scene transition from the first scene, wherein the scene transition comprises a number of frames and the scene transition is one of a number of types (Wells: column 10, lines 65-67), said video coding device comprising: means for receiving the data stream (Wells: column 7, lines 30-35); and an error concealment algorithm for concealing an error in a frame belonging to the transition based on the type of scene transition (Wells: column 12, lines 45-67; column 13, lines 1-30), as in claim 17.

Regarding claim 19, Wells discloses wherein if a whole picture belonging to the gradual transition is lost or corrupted (Wells: column 13, lines 40-52), a spatio-temporal (Wells: column 11, lines 50-55 and 63-67; column 12, lines 1-9) error concealment algorithm (Wells: column 12, lines 45-67; column 13, lines 1-30) is applied to conceal the lost or corrupted part of the picture (Wells: column 13, lines 40-55), as in the claim.

Regarding claim 20, Wells discloses wherein if part of a picture belonging to the gradual transition is lost or corrupted (Wells: column 15, lines 5-40), a spatio-temporal (Wells: column

11, lines 50-55 and 63-67; column 12, lines 1-9) error concealment algorithm (Wells: column 12,

lines 45-67; column 13, lines 1-30) is applied to conceal the lost or corrupted part of the picture

(Wells: column 13, lines 40-55), as in the claim.

Regarding claim 21, Wells discloses wherein the type of scene transition is a scene cut

and a part of a picture belonging to the scene cut is lost or corrupted, said error concealment

algorithm comprising a spatial error concealment algorithm for concealing error in the picture

(Wells: column 11, lines 50-55), as in the claim.

Regarding claim 22, Wells discloses wherein the type of scene transition is a scene cut

and a whole picture belonging to the scene cut is lost or corrupted, said error concealment

algorithm adapted to ignore the lost or corrupted picture (Wells: column 13, lines 1-30), as in the

claim.

## *Claim Rejections - 35 USC § 103*

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.      Claims 11-13, 15-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wells et al., (US Patent: 6,310,915: hereinafter referred to as "Wells") in view of Viscito et al.,

(US Patent Application Publication 2004/0005007 A1: hereinafter referred to as "Viscito").

Wells discloses a method (Wells: column 16, lines 35-67; column 17, lines 1-10) of

concealing an error in a frame (Wells: column 12, lines 45-67) of a video sequence, the video

sequence comprising at least a first scene and a second scene (Wells: column 13, lines 40-56),

the second scene having a scene transition from the first scene, wherein the scene transition

comprises a number of frames and the scene transition is one of a number of types (Wells:

column 10, lines 65-67), said method comprising: identifying the type of scene transition (Wells:

column 10, lines 10-20) and applying an error concealment procedure to conceal an error in a

frame belonging to the transition based on the identified type of scene transition (Wells: column

12, lines 45-67), as in claim 11. However, Wells fails to disclose that the information indicative

of the identified scene transition is provided a supplemental enhancement information message

so as to conceal the error based on said information. Viscito discloses that for encoded bitstreams

(Viscito: paragraph [0033], lines 1-6) it is known to use supplemental enhancement information

messages (Viscito: paragraph [0045], lines 5-11) in order to provide sequence level information

for compressed pictures at the network adaptation layer of AVC streams (Viscito: paragraph

[0034], lines 9-25). Accordingly, given this teaching it would have been obvious for one of

ordinary skill in the art to incorporate the Viscitio teaching into the Wells method by having the

generated scene transition information of Wells being sent as an SEI message as shown by

Viscito in order to have the Wells bitstreams provide sequence level information for its

compressed pictures at the network adaptation layer. The Wells method, now incorporating

Viscito's teaching of SEI messages, has all of the features of claim 11.

Regarding claim 12, the Wells method, now incorporating Viscito's teaching of SEI

messages, has wherein said information indicative of the identified scene transition includes an

indication of a scene transition type (Wells: column 10, lines 15-20), as in the claim.

Regarding claim 13, the Wells method, now incorporating Viscito's teaching of SEI

messages, has said information indicative of the identified scene transition is provided for each

frame belonging to the transition (Wells: column 10, lines 50-67; column 11, lines 1-12), as in

the claim.

Wells discloses video coding device (Wells: figure 1) for encoding a video sequence into

a data stream, the video sequence comprising at least a first scene and a second scene (Wells:

column 13, lines 40-56) and having a scene transition from the first scene, wherein the scene

transition comprises a number of frames and the scene transition is one of a number of types

(Wells: column 10, lines 65-67), said video coding device comprising: means for identifying

frames associated with the transition (Wells: column 10, lines 10-20); and means for providing

information about the type of transition (Wells: column 12, lines 45-67), as in claim 15.

However, Wells fails to disclose that the information indicative of the identified scene transition

is provided a supplemental enhancement information message so as to conceal the error based on

said information. Viscito discloses that for encoded bitstreams (Viscito: paragraph [0033], lines

1-6) it is known to use supplemental enhancement information messages (Viscito: paragraph

[0045], lines 5-11) in order to provide sequence level information for compressed pictures at the

network adaptation layer of AVC streams (Viscito: paragraph [0034], lines 9-25). Accordingly,

given this teaching it would have been obvious for one of ordinary skill in the art to incorporate

the Viscitio teaching into the Wells coding device by having the generated scene transition

information of Wells being sent as an SEI message as shown by Viscito in order to have the

Wells bitstreams provide sequence level information for its compressed pictures at the network

adaptation layer. The Wells coding device, now incorporating Viscito's teaching of SEI

messages, has all of the features of claim 15.

Regarding claim 16, the Wells coding device, now incorporating Viscito's teaching of

SEI messages, has wherein said information is provided for each frame belonging to the

transition (Wells: column 10, lines 50-67; column 11, lines 1-10), as in the claim.

Wells discloses a video decoding device (Wells: column 7, lines 35-45) for decoding a

video sequence from a data stream, the video sequence comprising at least a first scene and a

second scene (Wells: column 10, lines 40-56) and having a scene transition from the first scene,

wherein the scene transition comprises a number of frames and the scene transition is one of a

number of types (Wells: column 10, lines 65-67), said video coding device comprising: means

for receiving the data stream (Wells: column 7, lines 30-35); and an error concealment algorithm

for concealing an error in a frame belonging to the transition based on the type of scene

transition (Wells: column 12, lines 45-67; column 13, lines 1-30), as in claim 18. However,

Wells fails to disclose that the type of scene transition is indicated in a provided supplemental

enhancement information message so as to conceal the error based on said information. Viscito

discloses that for encoded bitstreams (Viscito: paragraph [0033], lines 1-6) it is known to use

supplemental enhancement information messages (Viscito: paragraph [0045], lines 5-11) in order

to provide sequence level information for compressed pictures at the network adaptation layer of

AVC streams (Viscito: paragraph [0034], lines 9-25). Accordingly, given this teaching it would

have been obvious for one of ordinary skill in the art to incorporate the Viscitio teaching into the

Wells decoding device by having the type of scene transistion information generated from Wells

sent as an SEI message as shown by Viscito in order to have the Wells bitstreams provide

sequence level information for its compressed pictures at the network adaptation layer. The

Wells decoding device, now incorporating Viscito's teaching of SEI messages, has all of the

features of claim 18.

## *Conclusion*

6.      The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Zabih (US Patent: 5,767,922) discloses an apparatus and process for detecting scene

breaks in a sequence of video frames. Jin (US Patent: 6,959,044) discloses a dynamic GOP

system and method for digital video encoding. Covell (US Patent: 6,721,361) discloses a video

processing system including advance scene break detection methods for fades, dissolves, and

flashes. Chan (US Patent: 6,865,227) discloses an error concealment of video data using motion

vector data recovery. Hannuksela (US Patent: 6,611,561) discloses video coding. Sato (US

Patent: 6,594,790) discloses a decoding apparatus, coding apparatus, and transmission system

employing two intra-frame error concealment methods. Kim (US Patent: 6,990,151) discloses

systems and methods for enhanced error concealment in a video decoder. Polit (US Patent:

5,561,477) discloses a system for coding a video signal in the presence of an image intensity

gradient. Saha (US Patent: 6,404,817) discloses an MPEG video decoder having robust error

detection and concealment.

7.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The

examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2621

asr
April 21, 2006

ANDY RAO
PRIMARY EXAMINER